DOUBLE NUMBER.

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## NOTICES.

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## NOTES.

**Royal Photographic Society's Exhibition.**—The annual exhibition of the Royal Photographic Society was formally opened on Saturday, the 23rd ult., by a soiree, to which a large number of guests were invited by the council. The exhibition, which is held at the Society of Water Colours Gallery, 5A, Pall Mall, S.W., will remain open until the 11th inst. A most interesting collection of pictures are on exhibition.

◆ ◆ ◆

**County Council and Cinematographs.**—According to the annual report of the London County Council, this body asks that Parliament should grant them greater powers, including more control in connection with cinematographic exhibitions on all premises, and that such would be illegal unless under a special license issued by them. This would enable the Council to "exercise a proper control over the places in which the entertainments were to be held, and could attach such conditions, etc." This, we may say, is, according to the report, to include even private houses. If this suggested control is granted, cinematographic apparatus will become a drug upon the market.

◆ ◆ ◆

**Free Lantern Entertainment at Lidgate.**—About a fortnight ago the village children of Lidgate had a great treat through the kindness Mr. F. S. Apps, of London. As he was spending a holiday there, he decided to inaugurate a free lantern entertainment at the Board School and invite all the children and their friends. They came in numbers and listened to interesting remarks and saw plenty of fine pictures projected on the screen. The juveniles had a fine time of it, and at the end fairly shouted their thanks to Mr. Apps.

◆ ◆ ◆

**Illumination of Niagara Falls.**—In connection with the coming Bullalo Exposition a series of tall poles are to be erected on both sides of the river and on the top of each will be placed search lights with rotating colours, and projected on the Falls. The electric current is to be obtained from the Falls. Rumour says that one enterprising firm has offered a large sum to have advertisement stencil slides projected during intervals, but so far the management have declined to entertain such proposition.

◆ ◆ ◆

**New Lime Cylinder Factory.**—A new lime cylinder factory, to be known as the Trilby Incandescent Lime Works, has just been opened at 2, Vestris Road, Forest Hill, London, S.E., by the new firm of W. H. Assender & Co., Limited, for supplying lime cylinders to the wholesale trade exclusively. Rumour says that two more lime cylinder works are to be started in other parts of England by different firms. These, with such factories as are already established, will surely supply the limited demand that there is for such goods.

◆ ◆ ◆

**"Photography" Annual.**—This annual for 1899 is to hand. It is under the editorship of Mr. R. Child Bayley, who has eliminated a number of pages which have from time to time appeared in former annuals, such as tables and formulæ, the better to keep within reasonable size the present work, which contains a very full review of the progress made during the past year in many departments of photography. The book is divided into six sections, and contains articles and *résumés* by several authorities on the various subjects elucidated, and also some 12 or more good illustrations.

**New use for Calcium Carbide.**—In connection with acetylene gas a German inventor has patented an apparatus consisting of a drum which is partly filled with water, and which contains a small tipping tank. When these drums are secured under water to a sunken vessel, and a cord pulled which tips the small tank inside containing the calcium carbide, acetylene is at once generated, and the drums with the wreck to which they are attached at once float to the surface—at least, this is the theory.

◆ ◆ ◆

**Photographic Salon.**—The seventh annual exhibition of the Photographic Salon was opened at the Dudley Gallery, Egyptian Hall, Piccadilly, W., on 22nd ult. and will continue until the 4th inst. Lovers of fine pictures should visit it.

◆ ◆ ◆

**Business Changes.**—Mr. E. H. Stevenson, the popular lanternist, lecturer, and entertainer, is leaving Norwich for Melbourne, where he intends to join his brother in business. Mr. Stevenson is taking his lanterns, slides, cinematograph, and other apparatus with him. We wish him success and also a pleasant voyage.

Mr. A. H. Saunders, late of Heath Street, Birmingham, has removed to larger premises at 109, City Road, Birmingham. Mr. Saunders makes a speciality of slide painting and operating.

## *Optical and Mechanical Effects for the Lantern.—No. XI.*

By **EDMUND H. WILKIE.**

(Late Royal Polytechnic Institution).

AMONGST the most useful effect slides in the collection of the lanternist exhibitor, are those intended for the imitation of atmospheric and elemental effects, such as lightning, rain, rainbows, snowstorms, and other displays of Nature's wonders of a similar character.

Many of these slides, producing effects which cover the whole of the picture, are adapted for use in any sets, and can be used with any picture in order to heighten the effect. Such slides are the lightning, snow, and rain, and to these and others of a similar nature it is now proposed to devote a few lines.

Violent storms on the stage and on the screen were formerly, and are still in some cases, accompanied by flashes of lightning of a "zig-zag" shape which are not altogether true to nature. These flashes of light appear to start from one corner and after travelling a short distance to change their minds and to return, when another fit of indecision seizes them and they once more resume their original paths. Modern scientific research has, however, thrown a new light on the subject, and by studying any of the numerous instantaneous photographs of lightning flashes we may form a better idea of the real form of the electrical discharge.

When we are viewing a scene and a lightning flash takes place, the result is not confined to a small portion of the clouds alone, it is not only local, but a general lighting up of the whole landscape takes place; and if we wish to realise the effect upon the screen in the best and most effective manner, we also must reflect the light upon all the prominent portions of our view.

Let us imagine for a moment that we are in the midst of the Atlantic Ocean looking at a waterlogged hulk drifting at the mercy of the heavy seas left by a storm now passing away, the clouds hang like curtains low down in the sky, and, although it is daylight, the whole scene is enveloped in a gloom almost resembling twilight.

In one portion of the sky the clouds appear to be breaking, and from this break occasional flashes of lightning

**illuminate the scene.**

Would the ordinary lightning slide be sufficient in this case? Certainly not, we need something much more vivid and effective, so accordingly lay out our effect as we see in No. 2 in Fig. XXXII. It forms a picture by itself and is made in this way:—When the main picture is drawn out, a plain glass is placed against it and the artist carefully draws all the outlines upon this top glass, great nicety being requisite in order that the two slides may register on the screen. The main body of the glass is then covered with opaque black with the exception of those portions which would be illuminated by the lightning's flash, after which these high lights are coated with a steely blue, and further heightened by means of a little half-tone shading and a free use of the etching point. When the whole result is put on the screen we see a dark, cloudy, and overcast scene which is lighted up by flashes of great brilliancy, and owing to the manner in which all the little details of the prominent objects have been worked up in the effect slide, the lightning actually reveals these objects to our view as we see in nature when these electrical discharges take place.

Forked lightning, such as we have just been describing, is usually accompanied by rain, in fact we may quote the words of the almanacs and say "much rain." Persons who are given to a little harmless exaggeration are wont to describe this kind of shower as "raining cats and dogs" and sometimes "pitchforks," and the writer remembers seeing an old woodcut in which these animals and articles were descending from the sky.

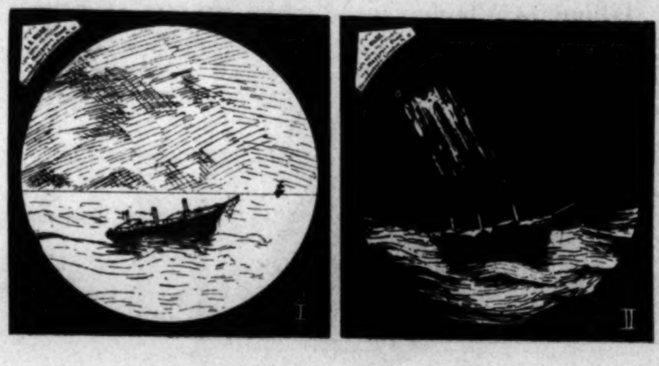


Fig. XXXII.

On the screen we must endeavour to represent several kinds of rain; for instance, there is the gentle shower which accompanies the rainbow effects in "The Seasons" set of effects, and on the other hand, is the deluge of water which should form a portion of the "Monsoon in the Indian Ocean." In Fig. XXXIII. we show one of the older forms of rain slide, which, although simple is yet very effective, and not subject to getting out of order and turning off the water just when it is required. It is continuous in its action, by which it is intended to convey that it can be worked for an indefinite period, which is a distinct advantage when representing a scene in our own tight little island.

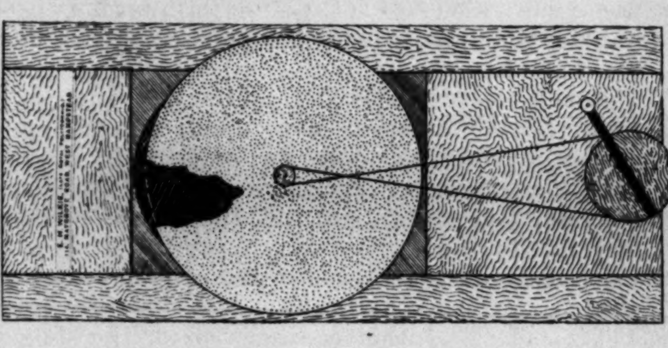


Fig. XXXIII.

The frame, which forms the body or foundation of the slide, is fitted with a glass, which after being covered with black varnish has a number of slanting lines etched upon it to represent the falling rain drops. In front of this is a circular piece of perforated zinc working upon a pivot in its centre and capable of being revolved at any given rate by means of a pulley and band, the latter passing round a multiplying wheel to which is fixed the actuating handle. As the minute openings in the zinc pass across and along the lines etched on the glass, a very fair representation of falling rain is presented when thrown on to the screen.

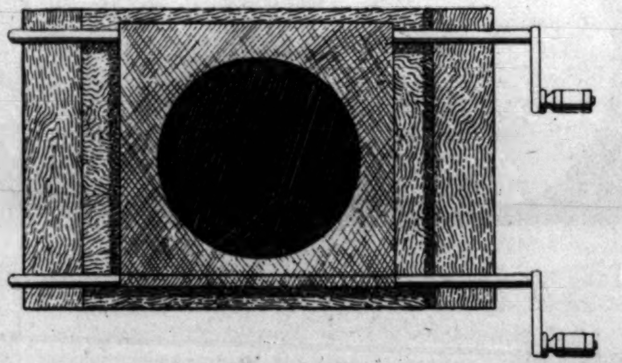


Fig. XXXIV.

Another rain slide which is very popular is shown at Fig. XXXIV.; this also has a blacked out glass with the lines drawn upon it, but the motion of the falling rain is obtained in another manner. Across the top and bottom ends of the slide are rods of metal terminating in handles which come out on the operating side of the lantern.

Round one of these is wound a long strip of some woven material very much resembling coarse muslin but with an open web of a particular character especially prepared for this purpose, the other end of the strip being fastened to the other rod just as the strip of black material is arranged in the ordinary snow slide.

The effect of this is that when the one handle is revolved and the woven material caused to pass along the markings on the fixed glass, a gentle shower appears to descend, and continues to do so as long as there remains anything to draw down.

Yet another rain slide is to be obtained and of an entirely different character to those we have just described, as in this case it consists of two plates of glass, one fixed and the other movable.

The markings on these plates are identically the same on both, but so much care and skill is requisite in getting the lines at the exact angle, and both alike to a hair's breadth, that the aspiring amateur had best pass these by as something which it would be unwise for him to attempt, as the slightest deviation from absolutely mathematical precision will result in a slide which may perhaps cause the rain to descend when the glass is moved one way, but which will quite as certainly cause it to ascend when moved the other way.

When these two effects, the lightning flash and the rain, are worked on the screen at the same time upon a suitable view as a background most effective and realistic pictures result, especially if the foundation view is for instance a storm at sea, launching a lifeboat, the rocket life saving apparatus, or any subject of a kindred nature.

So far we have only mentioned the appearance of the lightning flash without going into details concerning its results, but a flash of forked lightning which brings about no change in the picture is in the nature of an anti-climax. We are not content with witnessing the cause, we also wish to see the effect, and this it will be my endeavour to describe in the next paper.

* * *

## *Lantern Slides from Line Subjects.—No. II.*

**By G. E. BROWN.**

AFTER fixation the negative is examined carefully, glass side down, against a piece of white paper. The lines should be absolutely bare glass. If they are not, reduce them till they are. Let the ground weaken as it may; it can be brought up to good density afterwards. Farmer's reducer is very suitable, or a mixture of

| | | |
|---|---|---|
| Mercuric chloride .. | 10 grains .. | 2·5 gms. |
| Potass. iodide .. | 10 ,, .. | 2·5 ,, |
| Potass. cyanide .. | 20 ,, .. | 5·0 ,, |
| Water .. .. | 10 ounces .. | 1,000 ccs. |

which acts very evenly, with a tendency to eat out the lines rather than the ground. It is used after rinsing well under the tap from hypo. Should the plate now require intensification several processes can be used. Two good formulæ are given here:—

ACID SILVER.—Make two Solutions.

| | | |
|---|---|---|
| Pyro .. .. .. | 60 grains .. | 8½ gms. |
| Nitric acid .. .. | 1 fluid dram | 8 ccs. |
| Glacial acetic acid .. | 2 fluid drams | 16 ,, |
| Distilled water .. | 16 ounces .. | 1,000 ,, |

| | | |
|---|---|---|
| Silver nitrate | 10 grains | 23 gms. |
| Distilled water | 1 ounce | 1,000 ccs. |

Cover the plate with the pyro solution, drop a little of the silver into the graduate (say 6 drops per ounce of pyro solution), and return the mixture, after the pyro has been poured back to the dish. In this liquid the plate gradually gains density. It should be poured continually off and on to the negative. There is, by-the-bye, a right and wrong way of doing this. Do not pour the liquid into the middle of the negative, but, holding the dish on one side a little, run the lip of the measure down the upper side of the dish, so that the liquid steams over the negative. Another point is the cleanliness of the dish. It is best to keep a glass dish for the purpose, as it can be kept scrupulously clean by rinsing with a little nitric acid. Dirt on the dish attracts the deposit of silver to itself, thus exhausting the intensifier before process is completed. When the solution gets muddy or dark in colour throw it away and use fresh. As the plate comes from the solution, rinse it under the tap and place for a minute or two in the hypo bath, which removes the opalescence due to the precipitation of silver chloride, and is, I think, also advisable on the score of permanency.

The second intensifier is the well-known Monckhoven method. The strengths of solutions recommended by the makers of the plates are :—

| | | |
|---|---|---|
| Potass bromide | 100 grains | 23 gms. |
| Mercuric chloride | 100 „ | 23 „ |
| Water.. | 10 „ | 1,000 ccs. |
| Potass cyanide | 100 grains | 23 gms. |
| Silver nitrate | 100 „ | 23 „ |
| Water.. | 10 ounces | 1,000 ccs. |

Bleach through to the back in No. 1, and, after rinsing under the tap, transfer to No. 2, in which the plate gains great opacity.

It need not be said that for both these methods the plate must be completely freed from hypo. Twenty minutes washing in running water will be sufficient to do this.

The negatives dry in a few minutes in the air, or in a few seconds before the fire.

From good negatives the positives "print themselves," and slides which leave nothing to be desired can be obtained on collodion or gelatine plates. The collodion has the advantage of giving an intense cold black tone, with the added recommendation that a flat negative can be made to yield a vigorous slide. If I had to make a number of slides from indifferent line negatives I should use dry collodion plates; over-developing, reducing, and, after fixation, bringing up to the required density with acid silver. By adopting this routine it is surprising what good slides can be obtained from scarcely passable negatives. For this purpose a suitable developer is :—

| | | |
|---|---|---|
| Hydroquinone | 80 grains | 18½ gms. |
| Soda sulphite | 1 ounce | 100 „ |
| Citric acid | 30 grains | 7 „ |
| Potass bromide | 20 „ | 4½ „ |
| Water.. | 10 ounces | 1,000 ccs. |
| Caustic soda | 50 grains | 11½ gms. |
| Water.. | 10 ounces | 1,000 ccs. |

Use equal parts.

INTENSIFIER.

| | | |
|---|---|---|
| Pyro .. | 5 grains | 11½ gms. |
| Citric acid | 12 „ | 37½ „ |
| Water.. | 1 ounce | 1,000 ccs. |

to which is added 5 drops of silver nitrate solution, as given above.

For gelatine lantern plates I can recommend the above developer modified by using 160 grains (36·5 gms.) of caustic potash in place of the caustic soda. This develops rapidly. I prefer to over-develop considerably, and, after fixing, reduce with Farmer's reducer applied to the surface of the slide with a tuft of cotton wool. Fog is cleared off in this way, without the density of the lines being appreciably reduced.

I may mention in conclusion one reason for preferring gelatine to collodion for the printing of the slide—the tacky nature of the gelatine film. In masking line slides, my own practice is to dispense with the use of cut masks altogether, using in their place strips of needle paper with a clean cut edge. These are laid on the slide so as to mask the part desired, and, having been previously moistened, they adhere to the gelatine surface.

* * *

## *Headaches at Lantern Exhibitions.*

By THE DOCTOR.

THERE is an ailment well known to ardent picture-lovers as the "academy headache," and "lantern headache" is nearly akin to it. In both forms the principal cause is the same, the effort to carefully examine in a limited time a number of pictures, many of which are badly lighted or placed in an inconvenient position for viewing, thus necessitating a straining not only of the eyes but of the muscles of the neck.

Going more fully into details of the "lantern" variety of the disease, let us examine a few of the principal causes, and show, if possible, how they may be removed. Undoubtedly a bad position, *i.e.*, one in which the picture cannot be seen with the head and eyes in perfect comfort, takes first place. The worst position is usually the nearest to the screen, which is, by the way, often reserved for the *elite* of the audience. In that ideal room for lantern lectures the theatre of the Society of Arts, the front row is reserved for members of council, but it will be noticed that when an exhibition of slides forms an important feature in the proceedings of the evening that the more astute councillors sink their dignity and mix with their humbler brethren in the centre or even at the back of the hall. A seat at the side of the room even at a fair distance from the screen is under similar disadvantages, although to a less marked degree. To view a

**lantern exhibition**

in comfort, a distance of at least one and a half times the longest side of the picture should be allowed to intervene between the screen and the eye of the spectator.

The quality of the slides is no unimportant factor in the production of many a headache. The good old wet collodion slide, which until recently held undisputed sway in the dealers' catalogues and stocks, has many a time sent the writer home with a sensation of having spent his time in gazing into a fiery furnace. Wide expanses of glaring white, and smaller though no less apparent ones of inky black, left on the screen just long enough to burn their image on the retina, cannot fail to distress eyes that are not eagle like in their strength. Let a single slide of the same quality but *slightly* coloured be introduced into such a series and note the murmur of approval and relief; the hint should not be overlooked by the progressive lanternist. On the other hand, flat muddy slides are equally to be condemmed, for with these fatigue is caused by the endeavour to make out what the slide is intended to represent.

The size of the projected picture is also worthy of careful consideration. If too small it appears insignificant, but if too large the inconveniences of the near point of view already referred to become more apparent.

It should not be necessary to mention the extreme inconvenience caused by an open or badly screened back to the lantern when the latter has to be placed in the centre of the room. A blinding glare is frequently poured upon those seated behind the lantern, while an occasional opening of the side doors performs a similar kind office for those seated at the sides. It is inadvisable to turn up the lights during an entertainment more often than is absolutely necessary. The difference between an entertainment in which solos are sung and stories are told while appropriate pictures remain on the screen, and the average ladies' night of the local society, in the course of which the lantern show is interrupted to allow the various vocalists and reciters to pose in front of the sheet, needs to be seen to be appeciated at its true value.

Turning now from the optical to the elocutionary side of the question, we may often find the "lecturer" contributing more to the causes of headache than the lanternist. The ready-made cut and dried (very much dried as a rule) reading delivered by a lecturer without knowledge of his subject or sympathy with it causes a feeling of boredom in every case and of acute discomfort in many. Stale jokes dragged in, in a desperate endeavour to relieve the tedium of the narrative, do not as a rule mend matters.

In conclusion, the question of ventilation has to be dealt with, and it is probably the most important of all, for as a rule a room or hall is worse ventilated when a lantern exhibition is in progress than at any other time. The windows, even if open, are tightly curtained and doors opening into lighted lobbies and staircases are closed. The writer recalls an occasion on which he visited a private lantern show where a first-class oil lantern was being used. He arrived when it was about half over and was greeted with joy by the operator, who said "I don't know what is wrong with this lamp; it started all right, but I can get nothing but a brown and smoky flame." Without touching the lantern a door and a window were

**immediately opened**

and there was an instantaneous revival, not only of the light but of the spirits of the company, who were equally in want of oxygen.

With improved methods of manufacture and purification, the stuffiness caused by the consumption of acetylene is being almost entirely removed. It is, however, in all cases wise to secure as ample ventilation as possible.

LANTERN SLIDE VARNISH.—A quick drying varnish which is practically unaffected by intense heat may be made by dissolving 30 gms. of amber in 200 ccm. of chloroform. Any amber which may remain undissolved should be placed in a piece of clean rag, and squeezed into the solution.

# Shadowgram or Silhouette and Panoramic Slides.

By THEODORE BROWN.

## THE SKATER.—No. IX.

All the slides here described are of new and original construction, working models of each having been made and tested before publication by the author. Manufacturers will therefore find them to be thoroughly practicable, and if they desire to make them for the market they are at liberty to do so, providing a sample is sent to the inventor by way of acknowledgment.

THE silhouette slide called "The Skater" is, perhaps, the most effective of the whole series. The principles employed in its construction are, in some respects, similar to those used in "The Runners," described in a previous article, but, as will be seen, there are several radical differences that entirely remove all tendency to a sameness in the two slides.

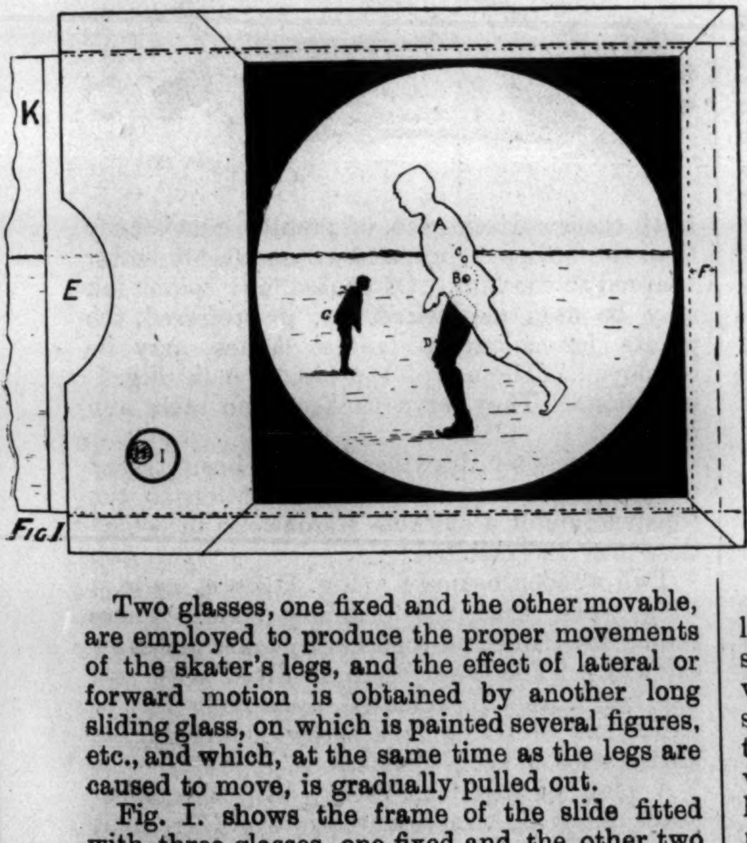


Fig I.

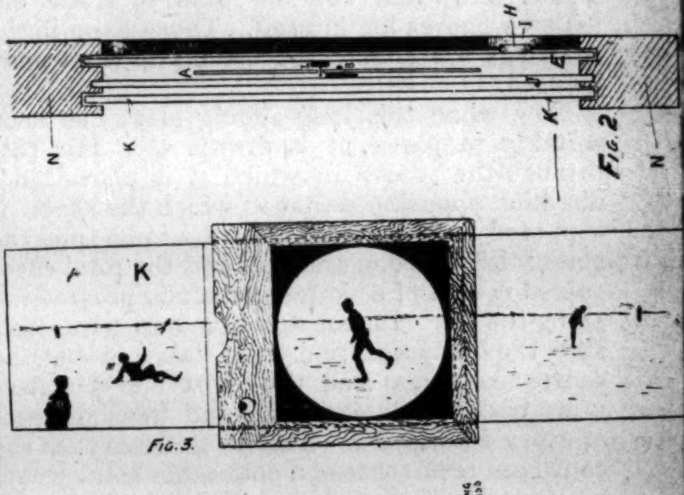


Fig. 2

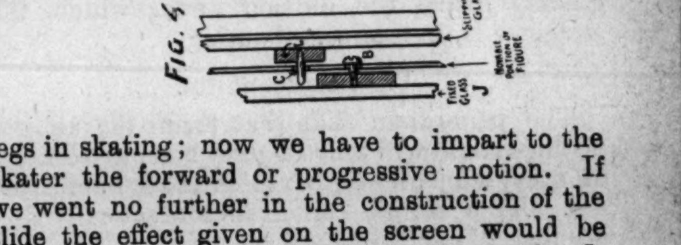


Fig. 3.

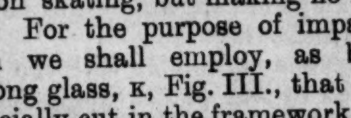


Fig. 4

Two glasses, one fixed and the other movable, are employed to produce the proper movements of the skater's legs, and the effect of lateral or forward motion is obtained by another long sliding glass, on which is painted several figures, etc., and which, at the same time as the legs are caused to move, is gradually pulled out.

Fig. I. shows the frame of the slide fitted with three glasses, one fixed and the other two movable.

The fixed glass is placed between the two movable ones, K and E. On this fixed glass is painted the black leg D.

A small block, indicated in Fig. I. by the dotted line B, is also fastened to the front of the centre glass. This block is shown in Figs. II. and IV. at B.

The body and remaining leg of the skater are cut out of one piece of metal and pivoted to the block B by means of a screw, shown in Figs. II. and IV.

Now, on the back of the movable glass E is fixed a small block furnished with a pin L, which works in a hole C made in the body of the skater. A round block H, Fig. I., is glued to the movable glass E, and works from side to side of a large hole made in the wooden framework of the slide. Now, when the glass E is drawn out as in Fig. I., the position of the skater is as shown, but when it is pushed back to fill the space F the skater is more upright, and, if the size of the hole in the framework is correct, both legs will exactly register one over the other. The quick back and forward movement of the glass E will impart to the figure the action of skating.

We have obtained the correct action of the legs in skating; now we have to impart to the skater the forward or progressive motion. If we went no further in the construction of the slide the effect given on the screen would be that of a person skating, but making no headway whatever. For the purpose of imparting lateral motion we shall employ, as before mentioned, a long glass, K, Fig. III., that slides in a groove specially cut in the framework. On this glass are painted, in dead black, the forms of persons in various attitudes on the ice. One, as G, Fig. I., may be gliding along with feet together, another, as M, Fig. III., may be depicted as having slipped up on the ice, whilst O may be merely a looker on. Any similar figures may be painted on the glass, but there is one very important thing to be noticed here. All the figures employed must be so engaged that when they pass in front of the audience on the screen no motion other than forward motion will be given or expected.

Let me illustrate my meaning by a reference to the diagrams. The figure G for instance, Fig. I., is supposed to have just got up sufficient impetus to propel him a considerable distance without any further effort on his part; consequently, as he passes across the screen, no one expects to see any movement of his arms or legs. The same thing holds good with reference to the fallen skater, M, Fig. III. In the first rush of confusion and surprise that would result on his fall, he would be helpless and practically motionless, and this state may easily be supposed to exist during the short period employed in his transit across the screen. The reader will doubtless see exactly what is meant now, and will be able to think out his own figures for himself. Those given in the drawings are simply suggestions of what may be used.

Now when this long sliding glass has been suitably prepared, it is drawn at a fair rate through the groove in which it is placed, in a direction opposite to that in which the skater is supposed to be travelling; at the same time the glass E is pushed in and out, and the total effect gained is that of a skater gracefully progressing along the ice. In constructing and using this slide the one precaution to be taken is that the centre fixed glass and the short movable glass E are both absolutely clean and freed of spots of every description. This is necessary, as the continual recurrence of a noticeable mark would quickly dispel the illusion under which the audience is, in reality, labouring.

### PANORAMIC SLIDE.

The panoramic slide that forms the subject of this article will prove a great boon to lecturers on every subject, whether scientific or humorous, etc. By a simple contrivance practically any number of pictures may be made on one long slide, and then shown by means of the lantern to the audience.

Everyone is familiar with the spools of films supplied by any photographic dealer for use in the hand camera. It is one of these long films that we shall use for the purpose of constructing the panoramic slide. These films are of almost any length and width, but the one that we shall need is 3¼ inches in width. Length is of no consequence; the reader may have it as long as he pleases. This roll of films attached to the spool or "reel" is now fixed in the hypo bath without having undergone any exposure or development. It is then washed and placed aside to dry, when it will be quite clear and transparent. Another reel of the same size as the other is obtained, and the free end of the film fastened to it. The film is now ready to be drawn upon.

The illustrations that form the pictorial part of the lecture having been selected, they are drawn upon the prepared film by the adoption of the method illustrated in Fig. I. The transparent support of the film is simply placed over the drawings with the film side upwards, and the illustrations traced thereon. Ordinary ink will not do for this purpose, as it will "run" and blot in a very awkward manner.

Antoine's black china ink is the best to use, or that as supplied with rubber stamps will do. Both these varieties are of greater consistency than the ordinary ink, and consequently better adapted to the film. Of course, any colour ink may be used as desired, or, if preferred, the paints for colouring lantern slides may be employed. The use of the blocks D in Fig. I. is obvious. They serve to keep the reels B B in place.

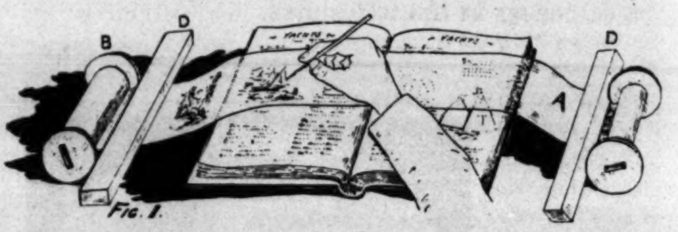


Fig. 1.

The necessary drawings having been traced on the film, we must turn our attention to the construction of a suitable framework in which they may be exhibited.

Two wooden beams J J (Fig. II.) are made, a trifle wider than the ordinary slide. These beams are connected together by brass plates F F (Fig. II.). The lower beam is fitted with two like cog-wheels C, actuated by a long rod, at either end of which is a screw K working in unison with the cog-wheels.

A plan of this framework, with the upper beam removed, is represented in Fig. III. This diagram illustrates quite clearly the method in which the cog-wheels are turned by the handle H. E E are revolving pillars connected by small pins to the upper and lower beams. These serve to keep the film as it appears in front of the condenser, in the same plane and taut.

The fact that the two cog-wheels are actuated by the same rod also helps to keep the film tightly stretched. The method of connecting the reels to the cog-wheels is shown in Fig. IV. It might be mentioned here that the cog-wheels are attached to the lower beam by means of small screws and nuts, as shown in this same figure (Fig. IV.). The cog-wheels revolve on these bolts, G.

A small piece of metal, in the form of an arch, is fastened to the centre and upper surface of each cog-wheel, and this, when the reel is placed in the position shown by the dotted line B, fits into the slot made in the end of the reel. The other end of each reel revolves on a pin, N, fixed to a plate, M, screwed to the upper beam. All the working parts of the slide, and the manner in which they are fitted together, have now been described.

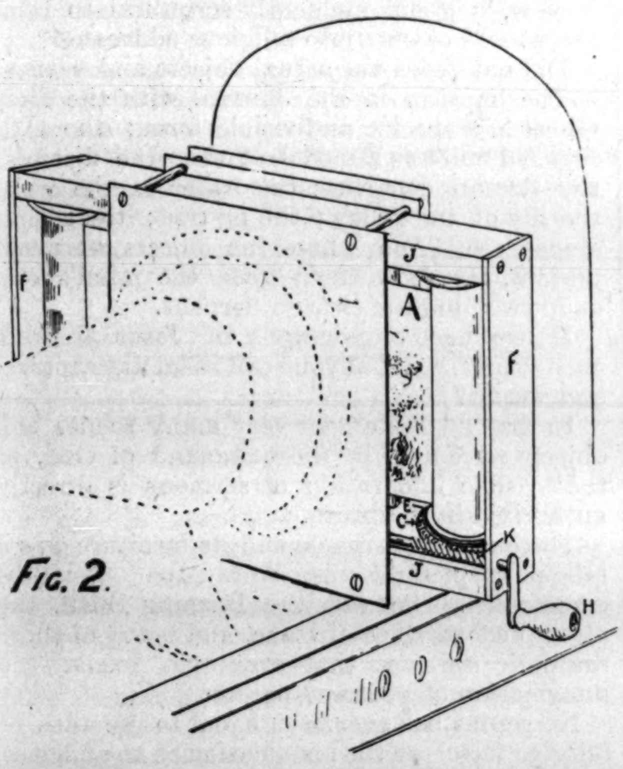


Fig. 2.

When the slide has been properly constructed it is placed in the stage of the lantern in the usual position, and the illustrations on the film are exhibited by simply turning the handle.

If the pictures have been drawn close to one another a continuous series of illustrations will be the result, but if desired, a small space may be left between each.

The lecturer can easily manipulate this slide, thus dispensing with an operator, and he will, no doubt, appreciate its compactness and convenience in transit.

If he desires to insert a new series of pictures, by taking out the four top screws and lifting off the top beam he can easily remove the reels bearing the film, and place the fresh reels in their place. The beam is screwed on again and the slide is ready for exhibition. Lest the reader should fall into the error of imagining that these operations would have to be carried out in the middle of a lecture, it may be pointed out that fifty or a hundred illustrations may be drawn upon the film, according to its length, and it is hardly necessary for me to say that this is more than the number usually required in an ordinary lecture.

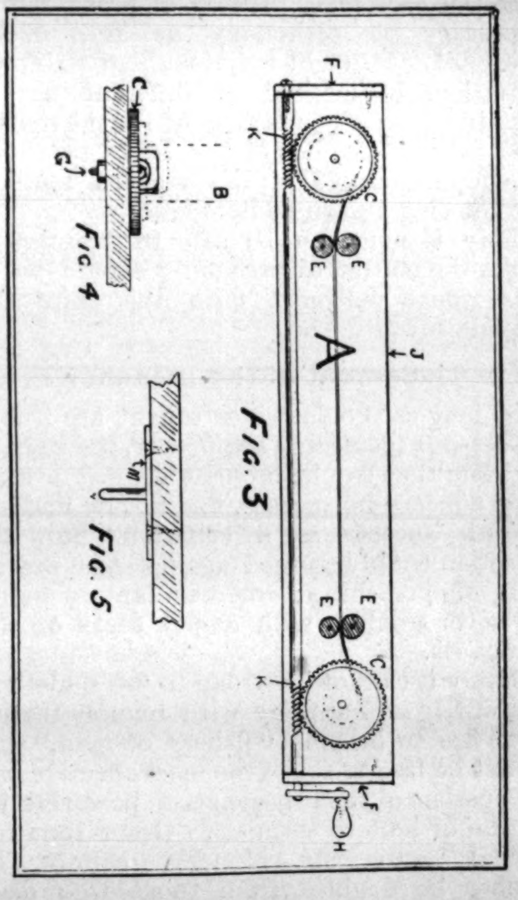


Fig. 3

Fig. 4

Fig. 5

[With reference to the first paragraph on this page it will be necessary that one of the cog wheels be secured to the roller by friction, for if one roller be filled with film and the other comparatively empty, the diameters are varying, and it follows that the two must revolve at slightly different rates in order to keep the film taut.—Ed.]

## *Lantern Sermons Justified.*

**By Rev. W. H. YOUNG, Ph.D., Athens, Georgia, U.S.A.**

MANY good people in pulpit and pew regard the lantern an intruder into any church. Suspicions arise concerning this auxiliary to the sermon which are generally ascribed to the conscience, but really come from prejudice.

The majority of the preachers believe that the customary method of preaching is as necessary to orthodoxy as the doctrines preached. It might surprise them to note the variations of method in different ages and countries, to say nothing of the obvious fact that between the lids of the Bible there is not a single example of the modern method of sermonising known as homiletics.

May it not then be safe to premise that, while the matter of preaching should be what was "once delivered unto the saints," the manner is left to the **judgment of the preacher?**

So long as the doctrines taught are true, and the lessons inculcated are proper, the only valid criticism that can be brought against a sermon must concern its success, and not its method.

With success as a criterion, how much objection could be urged against the prevalent style of preaching; whereas lantern sermons are never troubled with empty seats or sleepy occupants.

Surely it cannot be wrong to use a method so thoroughly in harmony with human instincts. If we are to become "fishers of men," should we not be free to select the most effective baits?

Experience then becomes a powerful justification of lantern sermons. Grant that many clerical lanternists blunder, cannot their number be doubled from those who disdain such an aid? And do lanternists blunder as much as sermonisers would who were as ignorant and unpractised in homiletics as some are in lanterns?

And even the blunderer is usually condemned by experts rather than by his audience; as a popular preacher might be condemned by his professor while enjoyed by the people.

No one ever gave as much thought and wise preparation to a lantern sermon as to an ordinary discourse without vastly greater results. Not only will the people come and enjoy every minute, but the lessons will be long remembered. The ordinary preacher wields a rhetorical power superior to that of the finest pulpit orator who uses no lantern.

Scripture also justifies the lantern sermon. Of course, no such instrument is named, because not invented in Bible times. But those people whose consciences demand a scriptural warrant for every religious act will at least find in the lantern "nothing contrary thereto."

What is the office of the lantern in sermonising? Is it not simply the placing of pictures, scenes, and objects before the eye, while the preacher explains or uses them? The lantern never preaches; it says nothing for or against; it needs no ordination, and if it did, how much more proper that the already ordained preacher should be the one to lay hands upon it!

Now, is it not eminently scriptural to bring scenes and objects into religious addresses?

Did not Jesus use actual objects and scenes?—The baptism in the Jordan, with the Holy Ghost in a specific and visible form; the little rejected child as a model of the true disciple; the Roman denarius; the water in the well; the lily of the valley; the fig tree; the temple stones, etc. And where the objects were not present, He drew them upon the mind's eye, as in recalling the Brazen Serpent.

If we had photographs of Jesus showing such scenes, could anyone call them unscriptural and wrong?

In the Old Testament very many scenes and objects were used by the command of God, so that visible illustration of sermons is directly authorised in Scripture.

The entire Tabernacle and its furniture was a religious picture, as were the Levitical ceremonies. So was the Burning Bush, the attempted sacrifice of Isaac, and many of those dramatic episodes that even yet excite the imagination of poet and painter.

No genius has ever been equal to the task of fully picturing on the imagination of an audience these biblical scenes, and yet **every preacher** makes the attempt, quite commonly with embarrassing failure.

Is it not quite as scriptural to show these scenes so that every person shall get a clear and perfect idea—using the divinely bestowed genius of the best artists—even though a lantern has to be employed?

But someone may object that there never was any use of screens, or light, or colours, in scriptural scenes. Let us see!

Take Genesis ix., 12-17. There is the screen of rain drops upon which the very best lantern illuminant, sunshine, is projecting that most brilliant and effective of coloured pictures.

So in Exodus xiv., 19-24, we have an "effect" slide that no lanternist can yet control. There is the fiery-cloudy pillar, dazzling bright on one side and inky-black on the other, through which was the face of God peering at the Egyptians in terrible anger.

In I. Kings xviii., 43-45, we have dissolving view effects. First, the brazen sea during that prolonged drought; then a little fleck of cloud is seen, which rapidly grows larger, followed by that terrible rain storm.

But if some realist asks for an actual screen, let him turn to Daniel v., 5, where a plaster wall is used—and no better screen has since been invented. Pretty soon there appeared upon this ideal screen the fingers of an immense hand holding a reed-pen and writing those three mysterious words.

But space will not permit even a list of the many biblical examples of religious instruction analagous to that of the modern lantern sermon.

* * *

## *Suburban London from a Photographic Point of View.*

**By E. DUNMORE.**

IN searching for subjects for the camera, we are apt to conclude that a considerable journey is necessitated before we can reach the happy hunting ground, quite ignoring things that are scattered broadcast under our very noses. Views we see daily, no matter how picturesque, are seen without having their photographic potentialities appreciated, when less suitable subjects after a journey would be at once recognised as the very things we required. It is to call attention to, so to say, at home districts that I am indulging in this writing.

Within an easy accessible radius of Charing Cross, suburban London contains an inexhaustible supply of picturesque subject matter, in all probability quite unknown and fresh to dwellers at the opposite extremity of London. The fact of mere absence for a few years from an outlying district renders it almost unrecognisable when revisited, owing to the demolishing of old landmarks and the erection of new buildings. As years pass, more and more rapidly are changes taking place; it therefore behoves photographers to take those views that will in a comparatively short time be non-existent, providing they supply the requisite picturesque quality the artistic worker longs to secure.

East, west, north, and south, all possess some claims to consideration and character of their own, some more so than others. Highgate, Hampstead, and Hornsey in the north have much deteriorated from a photographic point of view within the last 20 years, although some very pretty subjects yet remain, and will probably do so for some time to come yet. In the west we have Hammersmith, Chiswick, and Kew; in the south the Sydenham district; and in the east the Wanstead and Epping woodlands. In fact, take what direction we please, we find suitable districts for photographic work soon as we get a little clear of London itself. Portions of almost all our parks will supply many delightful nooks and corners, not much affected by the general public.

Then there is the River Thames itself, along its whole length replete with subjects, from the barges and larger shipping below bridge, its smoke and haze (smoke and haze can be made extremely useful adjuncts to a picture occasionally) to the crisp clear air and pleasure sailing craft of the higher reaches. Where can we find more picturesque parts than those near Kew? Look over the

**bridge on either side**

when the tide is out for an answer. Whether the new bridge about to be built will spoil it for the photographer remains to be seen, but I hardly think it will unless other demolitions and alterations are made too. At present there are plenty of good subjects for many pictures.

Hammersmith and Chiswick possess many groups of picturesque old buildings, historical and interesting, that are one after the other fast disappearing to make way for piles of modern bricks and mortar that as far as photography is concerned are not worth looking at. These old buildings, hundreds of years old in many instances, offer splendid opportunities for interior work of a quaint old-fashioned character such that artists delight to find, and a wide angle lens and rapid plates should not be particularly difficult to get, after obtaining by courteous diplomacy the necessary permission. Nothing looks better on the screen than a good interior. There is always a certain amount of interest excited in examining the details of such pictures; they also make excellent stereoscopic views.

No matter how the builder encroaches, destroying old landmarks, the churches are let severely alone, and as a rule there is sufficient space surrounding them to permit photographs to be taken, and they are generally worth taking, some making exceedingly pretty subjects; but the interior of churches in most instances have little interest except locally, and from a merely picturesque point of view are failures. Here and there we find some of decidedly historical interest, extending, of course, far beyond the locality in which it stands; but what with restorations, improvements, and decorations, many are shorn of much of the interest they possess pictorially, repeating one another decoratively in a very marked degree. Two churches occur to me as particularly suitable for reproduction exteriorally, namely, Chingford Old Church and Barnes Church from the south-west, either of which form to me ideal subjects of this class.

The Regent's Canal provides here and there some very pretty bits, notably at Paddington, which has had the honour of being called Venice in London; but the course of any of the canals are here and there most picturesque, especially at some of the locks, and as they get further away from London their surroundings improve. Street scenes do not generally commend themselves to the photographer in search of the picturesque, the traffic interfering too much to be pleasant. At the same time there are many

**suburban streets**

that make very effective pictures, and do not offer very much obstacle in the way of traffic. A snapshot on the top of an omnibus is an excellent method of getting otherwise difficult views, although stand camera work is infinitely preferable when it can be made available. It may be borne in mind that an elevated point of sight much above 6 feet will not make so pleasant a picture as one taken from a less height, as in the finished picture the point of observation is left to the imagination, and the only guide to it is the perspective of the view.

People generally like to see a view represented as they usually see it, and that is when walking, and the tops of vehicles and first floor window sills do not come within the ken of ordinary individuals doing a constitutional. The same remarks apply equally to interior work, which is best done from the floor rather than from a gallery or the top of a tall pair of steps. There are, of course, exceptions, when such positions are obligatory; but, as a rule, my advice is stick to the floor for artistic effect.

Another matter, when in a suburban district if a suitable subject be seen, it is as well to photograph it with as little delay as possible, as the chances are it will remain available for but a very short time, as unfortunately the suitable subjects for the camera are just those that get altered the soonest, a picturesque appearance not counting much with the modern builder; in fact, he seems particularly anxious to destroy it wherever it may be found. As years go on less and less of the really picturesque element will be found near London, but setting aside the changes wrought by builders, much of the pretty country that was available a few years ago near town has been enclosed by tall fencing, so that the tops of trees are only visible where attractive views formerly existed.

Those fond of tree and water scenery can scarcely do better than pay a visit to Kew Gardens or Wanstead Park. In either place there is no lack of very beautiful subjects, not trim and formal, but possessing a real natural wildness that confers a special charm upon them. Wanstead Park is perhaps preferable, but either are excellently adapted for photography. Any of our parks are worth searching, and will mostly repay the trouble.

Of course, in a short article like this, one cannot dwell upon or even give a list of all or a tithe of the suitable places to be found in suburban London that meet the requirements of the photographer on the look out for picture making. My advice is to take train or omnibus and see for yourselves, first turning attention to those parts soon destined to be built over. Having made your selections, secure your negative at the first opportunity.

* * *

## *Focusing Device and Holder for Enlarging.*

By **HILTON GRUNDY.**

JUST as one's education is never completed, so with the photographer and his requirements. Any new device or any simplification of existing apparatus is always welcome, and this must be my excuse, if such be needed, for bringing the following to your notice:—

A fixed focus enlarging apparatus is of great value, and the ease with which it is worked, makes it a very popular form with the tyro. A time comes, sooner or later, when a difference in size or the desire to locally alter any negative, or to print in clouds, makes one dissatisfied with the fixed closed-in form of apparatus. Then we turn to one or other of the numerous forms of enlargers on the market. But in all these cases there is more or less difficulty in holding the paper and in focusing. Even in strong daylight the focusing becomes a laborious task when one tries to get fine detail on a piece of white paper pinned to an easel. And when the focusing is done satisfactorily, probably with the aid of a powerful magnifying glass, the final pinning on of the bromide paper causes a loss of a certain width of edge, and the paper does not lie flat. An adept in the art manages, by long practice and a knowledge of the failings and idiosyncracies of bromide paper, to get over these difficulties readily, but the amateur who makes an enlargement now and again may find something in the following that will enable him more readily to focus up, to use any corner or part of his negative, and lastly to keep paper quite flat without loss of any edge. The cut gives a good idea of the apparatus I wish to describe. It is that portion which takes the place of the easel. To anyone who uses the working frame below, or on a table, the device stands as shown. To those who have the frame overhead then this device will simply be inverted. Along the frame there is a sliding piece, sliding to or from the lens. This sliding piece carries the holder to be described. This holder—note the base—slides into above-named piece from side to side. This gives a motion at right angles to the first. It may be compared to the sliding front of a camera. Then a glance at illustration (Fig. I.) shows that one may raise the paper. One frame moves in another to the extent of the slot shown at the side, and may be clamped in position by the bolt and nut similar to the rising front of a camera. We may also tilt the frame carrying the bromide paper to any angle desired, thus correcting distortion.

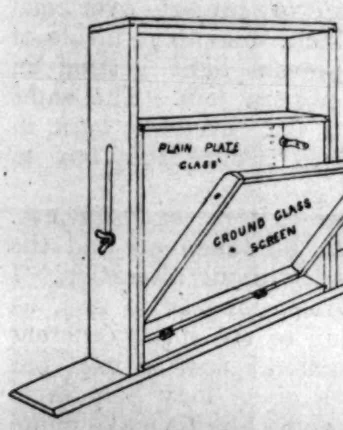


Fig. I.

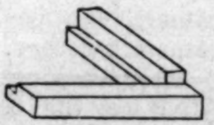


Fig. II.

A moment's thought will show that by these movements the bromide paper may be brought into any position directly opposite any part of the negative. Mine is made for any size to 12 by 10.

A piece of ground glass, 12½ by 10½, was fixed into a light frame by the ends only. One corner of the frame made thus, Fig. II., will give an idea of what is meant. The one piece has a very slight rebate just retaining ground glass and preventing slipping, the edge of the frame being below the surface of the glass. The other piece has a deep rebate and allows of a slip of wood being nailed along to hold the glass firmly.

Another frame holds a piece of plate glass by its ends, the edges being left free. Between the free edge of the plate glass and its frame is a clear space, sufficiently large to allow of the edge of frame carrying the focusing screen to pass through.

To sum up, the plate glass is held vertically in its length in one frame, and has its long edges free. The focusing screen is held at its ends horizontally, and the part of the frame standing up above the screen may lie on each side of the plate glass. By this means

**the ground glass**

may be brought into close contact with the plate glass. The ground glass frame is hinged in position at bottom, and held close by a catch at top. A pin in side of one frame may be made to engage in a hole in a brass spring on other frame, as shown.

It will now be easy to focus accurately the most difficult subject, and, when the whole frame is clamped in position, there need be no fear of any movement. If preferred, sizes may be ruled on the focusing screen.

When all is focused up—and here it must be noted, no allowance need be made for margin, for a 10 by 8 finished print may be got from a 10 by 8 piece of paper—the paper is inserted between the two pieces of glass, and held perfectly flat.

At present I can suggest two methods of keeping paper in place whilst closing the focusing screen.

First, a small piece of gummed paper attached to top, back edge of bromide sheet may be pressed to plate glass. This will float loose from paper in the developing dish.

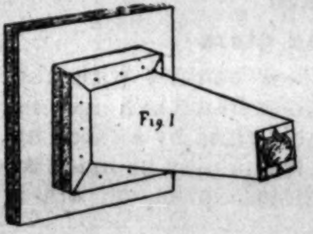
Secondly, a band of thin paper or tracing cloth may be passed behind the bromide sheet, and will hold the same in position till the back is closed.

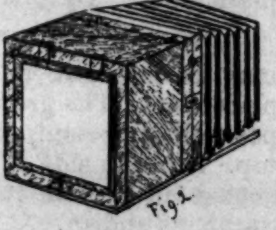
## *A Simple Camera Extension for Copying.*

By **GEO. KILBURN.**

HAVING noticed from time to time in the query column of the OPTICAL MAGIC LANTERN JOURNAL, as well as in other papers, enquiries as to what one must do to copy a photograph same size when the camera will not allow of sufficient extension, and, having met with this trouble myself, I will show how to overcome this difficulty without going to any expense—or, if any, only trifling—and not much trouble and labour.

In the first place, the form of camera to be used for copying purposes will have to be taken into consideration. Some makes of cameras are easily adapted for copying, others, owing to their peculiar shape, are not quite as easily adapted. The best form of camera for use in copying, whether for prints or transparencies, is an old square wet-plate camera. Some of these have sliding bodies and are without bellows. The one I use for lantern slide making is one of this pattern, but I found it was useless for copying in its original form, so I cut off the sliding part and made some cloth bellows, allowing for long extension, and fixed them in so as to enable copying to be done quite easy. Another point about this class of camera is that they move backward in focusing the picture, which is much better than those which extend from the front, as the size of the image can be better regulated.





To utilise an ordinary tourist camera with a short extension, one plan is to make a square tube of stiff cardboard to place in the front opening where the lens front fits, as shown in Fig. I. Make the tube to fit tightly into the opening, and glue a ½ inch strip of wood around close to the end; this prevents light entering when the tube is placed in position. To fix the extension tube it is put through the back of camera, the narrow end of tube pushed through the front opening close up to the end on which the narrow strips of wood are glued. Next put some narrow pieces on the other end inside the tube and flush with the end, and then fasten two pieces A A, Fig. I., with a groove in each to allow of lens board sliding in. The inside of tube must be painted dead black. The following recipe will answer as a paint for inside of tube or camera. Mix ivory black with turpentine to the consistency of ordinary paint, then add a small quantity of gold size.

Another form of camera much in vogue amongst amateurs is the Kinnear or taper bellows pattern. The best way to adapt this kind of camera for copying purposes is to make a square box to fit in back part of camera where the reversing back is fitted. All that is necessary to do is to make a box exactly same size as the back part of camera. Having done this, remove the reversing back and put on some fastenings on one end of box to hold the reversing back in position, similar to that which holds it in the camera. At the other end of box fasten on some narrow slips of wood on the inside, allowing them to project over end of box about a ¼ or ½ inch, so as to go inside of camera, which will prevent light getting in where the box and camera join. The same fastenings which hold the reversing back in camera can be used to secure this box to camera together.

After blacking the inside it is ready for use. After use the box can be taken off and the reversing back replaced without alteration. I have not given any dimensions as to size, as this is impossible, owing to the many different makes and styles of cameras now in use; but perhaps the few hints given may help some brother, and thereby enable him to make more use of the apparatus he already possesses. The drawing (Fig. II.) will explain the box extension, and shows it attached to camera, with the focusing screen fitted in ready for use.

## *Warm Tones in Slides—A Little Used Process.*

By **G. E. BROWN.**

THERE is no need nowadays to say anything in apology for writing on how to produce a warm-toned slide. Lantern slide makers of the amateur class have indeed swung over to the extreme view that a warm tone is the one to be sought after just as strenuously as was the coldest of cold blacks a few years ago. The wise course, it need hardly be said, is to suit the "tone"—by which we mean the colour—of the slide of the subject. The ingenuity of the experimentalist has evolved many processes whereby colours of every variety can be imparted to the image which reposes on the lantern plate. Some of these are complicated. Some of them give results, the permanency of which is doubtful. Among them all is one which is, I fancy, but rarely practised notwithstanding the fact that much can be said in its favour. It is an after process of that order to which the term "substitution" is applied, since the silver image is replaced by some substance. It may be older than the date given below, but the process and formula which I have used I first saw described by Milton B. Punnet in 1896. The chemistry of it is straightforward, and gives every ground for supposing, apart from practical tests, that the results are permanent. The silver image is converted by an oxidising mixture into silver chloride, which is then treated with a sulphide in order to form an image in silver sulphide.

Here is the formula :—

| | | |
|---|---|---|
| Potass bichromate .. | 2½ grains .. | 6 gms. |
| Alum .. .. .. | 40 ,, .. | 92 ,, |
| Table salt .. .. | 5 ,, .. | 12 ,, |
| Sulphuric acid (concentrated) | 5 mins. .. | 10 ccs. |
| Nitric acid (concentrated) | 2½ ,, .. | 5 ,, |
| Water .. .. | 1 ounce .. | 1,000 ,, |

I give the quantities in both metrical and English units, and should like, in parentheses, to point out the convenience of the first-named system, if used intelligently. As it stands, the formula gives the quantities for making 1,000 ccs. of solution, *i.e.*, about 35 ounces. By merely taking one-tenth all the way down, we have the quantities for 100 ccs., *i.e.*, for 3½ ounces, and this without any of the utterly maddening and time-wasting calculations of grains into ounces or drams with which the English formularist loves to juggle. Then, by getting people into the habit of always expressing formulæ on this "gms. per litre" basis, it is easy to compare them by inspection, which it is not when they are given as so much to 20 ounces, or 70 ounces, or 7½ ounces. But this is a digression.

The lantern plate is developed in the usual way to a black tone by any developer; the process does not affect the density of the transparency to any appreciable extent one way or the other. It is fixed, well washed, and placed in the above solution, which is kept gently rocking. In three or four minutes the image disappears or becomes only faintly visible. As soon as back and front present the same appearance, rinse under the tap for a minute or two, and place in a dish of clean water. It is advisable to do the bleaching of all the slides in hand right away.

The second part of the process consists in the application of a solution of sulphuretted hydrogen in water. This can be purchased at any large chemist's very cheaply. It should be kept well stoppered. On exposure to the air it becomes milky by deposition of sulphur. This does not affect its use for the purpose under consideration, beyond somewhat weakening its strength. The reader probably knows that the solution has a distinct odour. For this reason it is recommended to perform the second part of the process in some unfrequented spot—in the open air if possible; at any rate, not where sensitive plates or papers are stored. Its action is quite regular, and, as soon as the plate is blackened through to the back, it has only to be washed for a minute or two and dried.

Probably most lantern men know that when a black coloured slide—if the Hibernism may be excused—is toned to a warm colour, a most conspicuous feature in the change is the transparency imparted to the shadows. This is very evident in the above process, and slides treated by it are softened down in a manner which enhances their effect, in most cases, upon the screen. It is worth while spoiling a plate to test this. Bleach one half of it, by tilting it in the bichromate bath, and, after rinsing and applying the blackening solution to the whole, notice the effect on the screen where the dividing line crosses some heavy shadows.

The colour produced by this process naturally varies somewhat with the brand of plate, but is usually an agreeable brown.

* * *

## Hints on Lantern Lectures.

By THE REV. H. BEDFORD PIM, M.A.[*]

MODERN methods of education and instruction have been distinguished by an increasing recognition of the principle by which the eye as well as the ear is made to receive the desired impression. To be taught by pictures is no longer considered the exclusive privilege of children. Every means that can be discovered is being utilised for bringing more and better illustrations before larger and more intelligent assemblies, until we have reached a point at which it would seem true to say that people will hardly condescend to listen to instruction or information of any sort unless it is elaborated, and shall we say sometimes well nigh obliterated, by pictures.

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[*] The National Church.

The power of imparting information by means of pictures is very considerable, and at a time when a serious demand is being made for information on important topics, adapted to the intelligence and capabilities of all classes, the power of illustration should be

**carefully studied**

by all who occupy the office of instructor. It is a power with very distinct limitations, which can only be appreciated by carefully keeping in view at one and the same time not only the object to be gained, but the means by which it is to be reached. In plain words, illustration is not instruction, but only a help towards it. No method of illustration is so capable of almost universal adaptation as the optical or, as some still call it, the magic lantern. Enormous improvements in photography, in optical science, in the use and manufacture of illuminants have combined to produce in the optical lantern a highly perfected piece of machinery, by which pictures of extreme accuracy, not to speak of great beauty, can be efficiently shown to half a dozen people in a drawing-room or to 4,000 in a great public hall.

The general utility of the optical lantern is now admitted on all hands, but its adaptability is as yet hardly realised. We propose accordingly to give some hints as to the use of the lantern in the ordinary run of parishes, which are too often considered for various reasons to be beyond the reach of such help except on very rare occasions. The obstacles generally urged against the use of the lantern in country parishes are chiefly concerned with the lantern itself, and are of three kinds—expense, difficulty of working, danger. To take these in order.

Expense—Every parish should be able to command the use of a lantern whenever required. Every parish cannot afford to purchase a lantern for its own exclusive use, and to hire one from the nearest great town whenever wanted is a very costly proceeding. What is the remedy? Combination. It is increasingly recognised that no area is so conveniently adaptable to work in as that of the rural deanery, and it may be said without fear of contradiction that each rural deanery should possess a lantern, and could easily do so. The cost of a first-class oil lantern is £4 10s. If this be purchased, for example, for a rural deanery of fifteen parishes the contribution from each parish will be 6s. Each parish thus sharing in the purchase will then have a right to share in the use, and a contribution of 6d. from each parish to the Rural Dean whenever the lantern is used would more than cover the cost of wear and tear, and would probably pay for the oil and carriage as well. Is there any parish really anxious to have the use of a lantern which cannot afford to join such a ruri-decanal scheme? As to the expense of the slides, combination again is the remedy. When a series of lectures are given during the winter in a rural deanery, arrangements can be made by which sets of slides can be hired from the Church Committee at a very insignificant cost, a cost which could be more than met by the charge of 1d. or 2d. admission. Such a plan should entirely remove the necessity for a condition which we know to be the rule rather than the exception under which the pocket of the parson alone is taxed, and taxed heavily, whenever he has felt the need of a lantern to assist him in the work of his parish.

Other accessories can be obtained on the same system of combination. A sheet and a stand to place the lantern in the best possible position are, however, better procured by each parish separately, as the size and shape of schoolrooms vary so considerably that it is almost impossible sometimes to adapt these necessary pieces of apparatus. There is no "sheet" so good as a flat wall, painted white; it can always be cleaned and is always "up." This is already to be found in many country schoolrooms, and when wanted the maps and pictures are simply taken down.

Difficulty of Working.—This is, perhaps, a more serious obstacle. There is no question that a lecture is much more effective, and the lecturer much better able to concentrate himself upon his subject when the lantern is in the hands of a skilled operator; but there is no reason whatever why someone in every parish, where the ruri-decanal lantern is ready to be practised upon, should not be a

**skilful operator.**

It is simply a matter of practice. Personal instruction is, however, necessary, and this ought not to be hard to obtain; a number of little points connected with the focus of the pictures, lighting of the lamp, placing of the lantern, use of the slides, and the like, are much easier to explain in practice than on paper. If this practical knowledge is at first locked up in the hands of some one cleric or layman in a rural deanery, let him go to the different parishes and there instruct others; in this way all difficulty of working should be removed, and anyone coming to lecture could be assured that a good lantern, and careful manipulation of the same, awaits him. It is only the travelling lecturer who appreciates the meaning of this.

DANGER.—The possible danger from the use of the lantern proceeds from the necessary use of an illuminant. Wherever there is a light there is a possible danger of fire; we do not, on that account, banish artificial light from our dwellings. It may be said there is no more danger of fire from the lantern than from a kitchen grate or a bedroom candle. The danger proceeds from improper use. There are three principal illuminants used in lanterns—oil, gas, compressed gases and lime—these are placed in their relative illuminating power. Oil is sufficient when no larger picture than one 9 feet in diameter is required. The lantern referred to above as costing £4 10s. is fitted with a most excellent oil lamp, and is **extremely simple** in operation; only the best oil must be used, and varieties of oils should never be mixed in the reservoir. Gases compressed in cylinders, or combined with ether saturators, produce the well-known limelight suitable for and, indeed, necessary in large rooms, and of course superior to oil, in that the light produced is not only more powerful, but is white instead of yellow. There is no inherent danger in cylinders of compressed gas; they are safer than oil cans. Limelight, however, requires very careful manipulation, and is not only unnecessary in the majority of country parishes, but is more costly than oil, and the necessary fittings add about 30s. to the cost of the lantern. Carriage of gas cylinders is also a heavy item of expenditure. Gas (not compressed) a new illuminant of great power, giving a white light and costing about 4d. per hour, is now at the command of everyone. Acetylene is far superior to oil, and in many ways far more convenient than limelight. It is generated on the spot where wanted in a special apparatus, and is not dangerous, and when properly handled does not smell. A portable apparatus for use in country schoolrooms costs £2, and the materials used in manufacture—water and calcium carbide—are cheap, costing, as stated above, about 4d. per hour for a light much superior to oil, and giving a picture up to 12 or 14 feet in diameter instead of 8 or 9 feet. Let it be stated again that all lighting apparatus should be thoroughly understood; the theory that anyone can turn a tap and light a lamp will not do with lantern lamps; the operator must know his machine and should let no one else meddle with it.

(*To be continued.*)

# *Dreyfusonia Unscreened.*

## A WARNING.

**By WILLIAM PAVITT.**

IN a shop window near Dalston Junction, at the time of writing, is to be seen a bill worded, "Scenes at Rennes." On inspecting the window, the public are invited inside free of charge. When inside we find the place lined around with "mutoscopes" perhaps 12 to 16 instruments in all. By dropping a penny into any one of them, are to be seen an amusing farce, or a bit of comedy, or a boxing match, a duel scene between women, from a well known play, and many others, and among the many others are "Scenes at Rennes."

Readers need not be reminded that the mutoscope is an instrument full of amusement and one does not easily tire in looking into it. There is one fault, a fault common with all living picture machines; whilst you are laughing at your very best—bang! it's finished. The pull up is too sudden, and like Sam Weller's love letter, you wish there was more.

But this is not so with "Scenes at Rennes." They are just long enough, no more, no less, and what I would advise is that they be kept as mutoscopic subjects. This means that lanternists leave all pictures alone that have a trace of Dreyfus about them.

But why! "A rumour ran round on the ninth of the ninth of ninety-nine simultaneously with the verdict on that **most wretched trial** that history has ever recorded that we are likely to have thrust upon us a lantern lecture with slides, depicting of course scenes and incidents of Dreyfusonia."

All lecturers that I have come in contact with, and they are many, have without exception had some good object to the front when thinking out, writing, or arranging their evening bill, but where may be asked will the subjects mentioned above fit in.

Where will come the good of going over ground, ground that is full of dirt, ground that is full of scoundrelism, forgery, conspiracy, flagrant bias, lies and hypocrisy. Can anyone show what good can be done by talking of the morality of a Mercier, a Henry, a Du Paty de Clam, a Bertillon, a Roget, and the whole accusing military gang.

No lecturer surely would care to have his oration subjected to the hisses and groans that undoubtedly would accompany it.

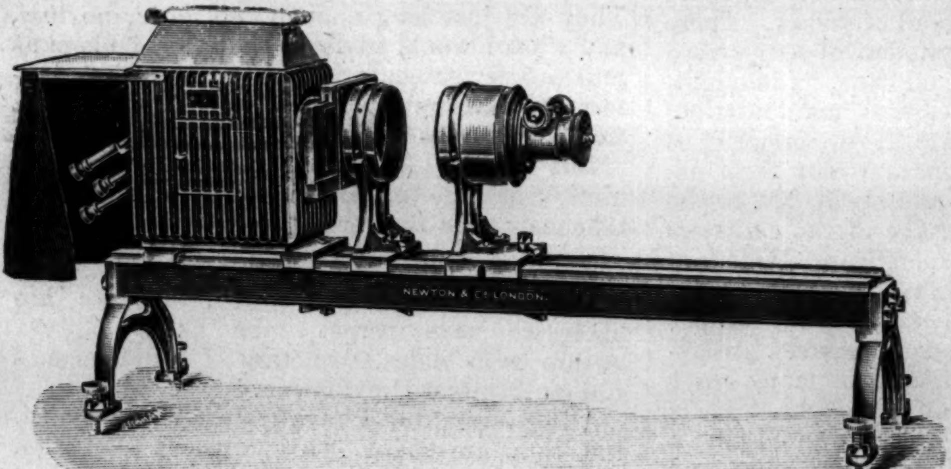
Sketching the life of "Dreyfus" without introducing the horrors that have surrounded it is an impossibility, and for that reason I would guard lanterndom against such a nauseous subject.

Let us hope that the rumour will remain rumour, and that "Dreyfus" will remain as far as concerns lanterndom unscreened.

## NEW APPARATUS.

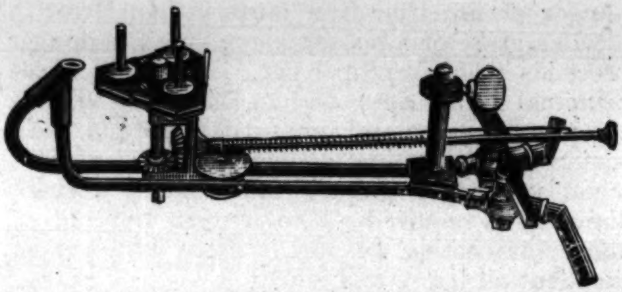
### NEWTON'S NEW LANTERN AND SLIDES.

One of the latest lanterns for science use, made by Messrs. Newton and Co., of 3, Fleet Street, E.C., is known as Newton's Lathebed Science lantern. The illustration shows the parts so distinctly that its usefulness will be at once apparent. The lantern is of aluminium and is mounted upon a planed iron lathebed 3 feet long, the optical parts are movable, so that adjuncts can be secured in place at a moment's notice. Amongst the new sets of lantern slides issued we find Scenes in Australia, Astronomical work, Views in Belgium, Butterflies, Views of Burmah, China, etc. A set of slides illustrating the life of the wheat plant from seed to seed is of particular interest.


NEWTON & Co LONDON.

### TYLER'S TRIPLE LIME CHANGING ATTACHMENT.

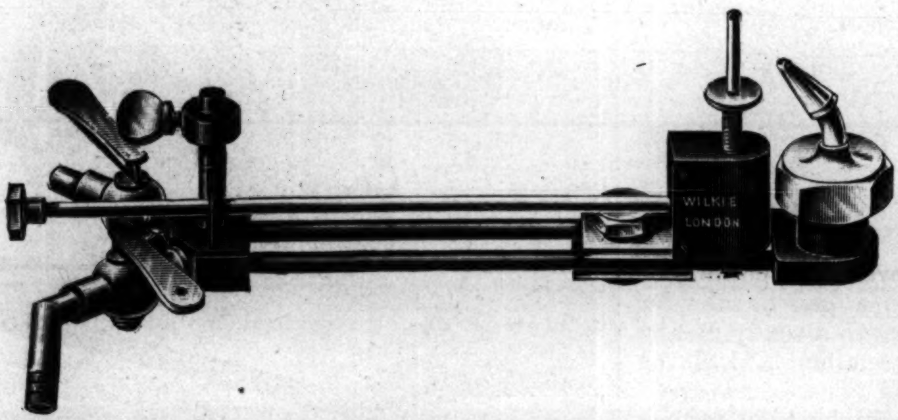
Mr. Walter Tyler, of 48, Waterloo Road, S.E., is bringing out a new attachment which can be applied to any ordinary limelight jet with practically no alteration save the insertion of a small pin as a stop at the side of that part of the jet which carries the cog wheels for turning the lime. We are enabled to show an illustration of a jet to which this attachment (a patent for which, we understand, has been applied for) has been fitted. It will be seen that it consists of a simple train of wheels containing three lime pins, all of which rotate simultaneously, thus ensuring the equal heating of the reserve limes during the time the front one is in use. Should, as too often happens, the front lime break, a new lime thoroughly heated can at once be brought into position in front of the nipple simply by pulling a small knob and turning the rod which controls the turning and raising of the limes. This is effected almost instantaneously from the back of the lantern. The attachment, which we have stated can be applied to any ordinary blow-through or mixed chamber jet, is to be supplied for a few shillings, and should readily become a part of every lanternist's outfit. As most lanternists are aware, the lime pin of a jet is screwed into the coarse travelling screw which holds it. This pin is simply unscrewed and the lime changing attachment screwed into its place, a spiral spring and the check stop (supplied) are slipped on the usual rod which controls the turning of the lime, when, with the addition of the pin spoken of, it is ready for use.



We have experimented with this attachment and have never failed to change the lime in a twinkling.

### WILKIE'S SOLAR MIXED GAS JET.

We made a casual announcement of this jet in last issue, which is the result of numerous experiments on the part of Mr. Edmund H. Wilkie, of 114, Maygrove Road, West Hampstead, N.W., and are now able to present to our readers an illustration of same. One improvement, which is at once noticeable from the illustration, is that the lime turning mechanism is enclosed, thus obviating all chance of the cog wheels clogging with dust or chips from the lime cylinder. The jet itself is of special construction, the mixing chamber and nipple being so adapted as to give an intense light with the minimum consumption of gases, and also to prevent excessive heat save at the lime itself. Provision is also made to prevent reflex action in the mixing chamber so as to adapt this jet to saturators when desired to use it with same. Mr. Wilkie, who is one of our greatest lantern experts, pays special attention to the general finish, testing, and silence of those jets when working even at their greatest pressure, so that all jets bearing this name will be found to fulfil everything that he claims for them.

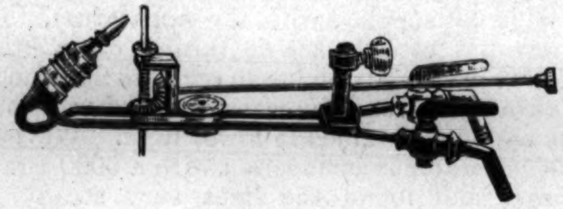


### THE MIDGET ACETYLENE GENERATOR.

The Midget acetylene generator made by the St. James's Illuminating Co., Limited, of 4, Ryder Street, St. James's, S.W., is a very handy and portable apparatus, whilst in construction it is simple and all parts are easily get-at-able. It consists of two zinc tanks which are screwed together, as shown in the illustration. In the bottom tank, which measures 6½ by 4 inches, a quantity of calcium carbide is placed, it being of sufficient capacity to hold enough for several hours' lighting if necessary. The upper tank, which measures 4 by 5 inches, is screwed to the lower tank and filled with water by means of the screw cap at right hand side of illustration. A rubber tubing is then sprung on the outlet at top and connected to the burner in the lantern (this is not supplied with the apparatus). The screw nut at left side is turned on a little; (there are several notches to regulate the amount of turning on), and the water allowed to drip on the carbide contained in lower tank. We used this generator in connection with a 0000 Bray's burner and found the light very steady for several hours, and consider it particularly useful for lantern work where the size of disc required is small; we mention this particularly because owing to the construction of the apparatus there is little pressure of gas generated. We would have liked to have got slightly more pressure so as to improve the intensity of the light, but, on the other hand, this precluded all possibility of over generation, consequently there seems no chance of smell of escaping gas. It might be well, however, for the lanternist to use a small trap (this can be made for a copper or two) at the lowest bend of his rubber piping so as to collect any moisture that may be condensed. This generator is well made, handy to manipulate, and sells at a very moderate price.

### THE BONNEVILLE JET.

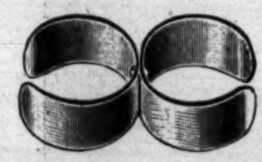
Mr. Bonneville, of 208, St. John Street, Clerkenwell, E.C., is now making a jet which is well adapted for use with gas from the main and oxygen from the cylinder, and being constructed somewhat after the well-known principle of a steam jet injector, draws an ample supply of house gas to give an exceedingly brilliant illumination. The nozzle portion and chamber are of a somewhat peculiar construction and shape, which likewise serves as a distinguishing mark for this jet, which, when desired, can be used with both gases under cylinder pressure. The general arrangement of the jet consists of

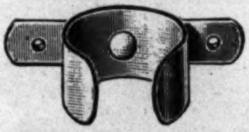


two nipples of different sizes, together with a circulating cone, and the light given is brilliant and well concentrated.

### PRIMUS NOVELTIES.

As usual, at the commencement of the lantern season, Messrs. Butcher & Son have a goodly supply of novelties. A simple little appliance called a gas tube adjuster will be found useful at most lantern exhibitions. This is made in

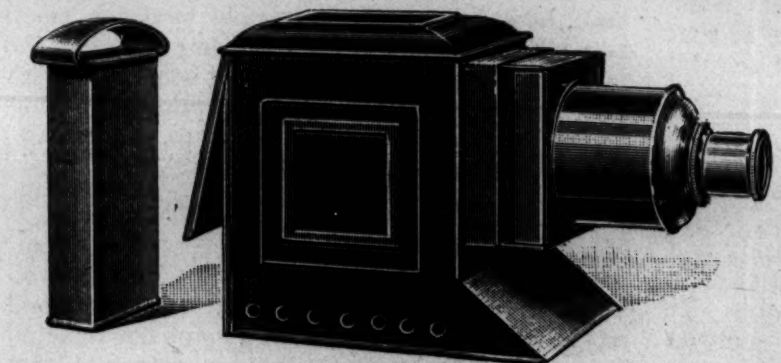




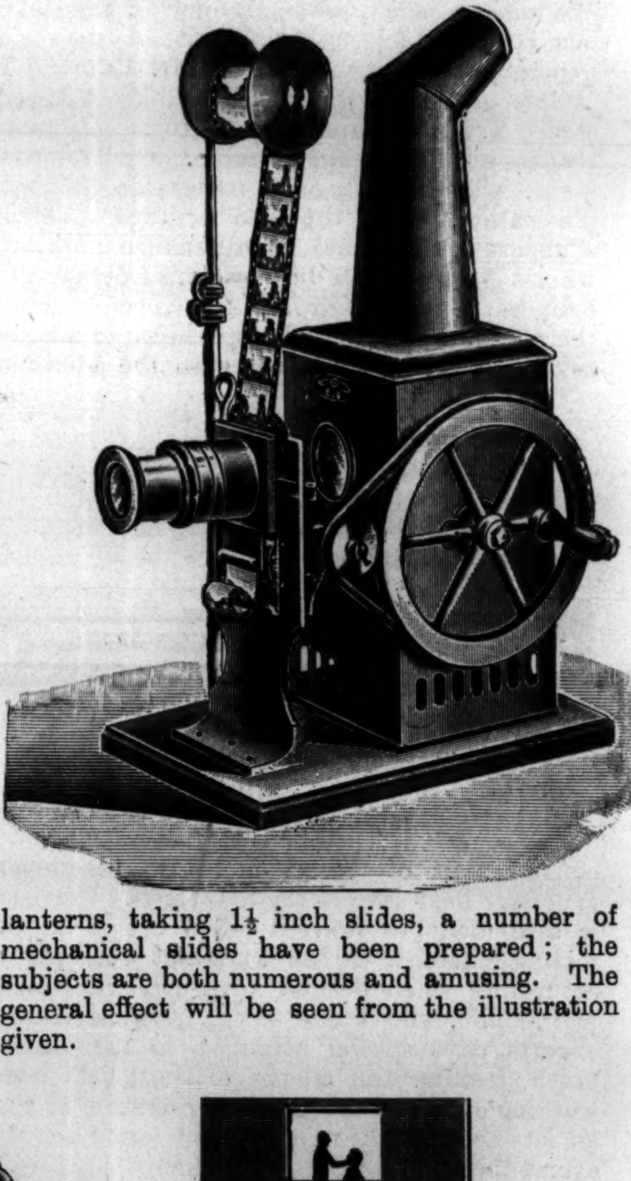
two styles as shown, and prevents all possibility of rubber tubing kinking at a gas burner for blow-through jets, and forms also a ready means of suspending tubing either along a wall or festooned from projections.

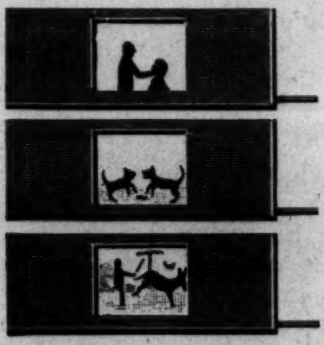
Amateur photographers will be able to use their photographs as candle shades when fitted into the frame supplied by Messrs. Butcher. The picture can be quickly inserted and held in the frame, which is also supplied with a candle clip.

Their tin body lantern, which is fitted with 4 inch condenser and lens, has been reduced in price to 16s. One would hardly think that a lamp is included in this figure, but it is.



Juveniles who wish to indulge in the pleasures of cinematographic projection will find much enjoyment from the "Toy Cinematograph," which is certainly a marvel of cheapness. The fittings are arranged to take the full-sized Edison gauge cinematograph film. Six small films are supplied with each outfit. For toy lanterns, taking 1½ inch slides, a number of mechanical slides have been prepared; the subjects are both numerous and amusing. The general effect will be seen from the illustration given.



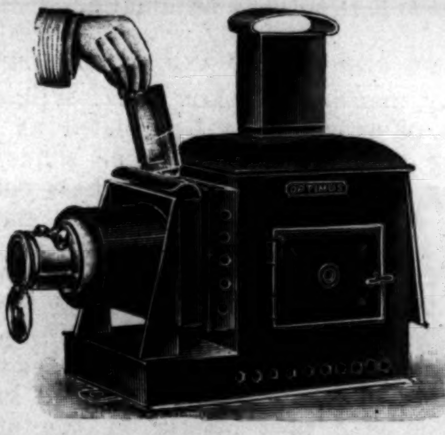


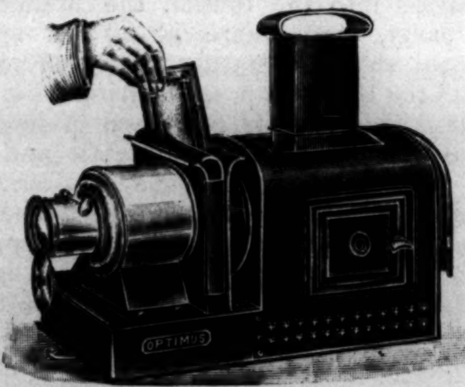
A special feature is made of supplying a lantern with the "Biokam" already fitted and adapted. Many other apparatus and novelties are also introduced by this firm. As usual the

Lanternist's Pocket Book makes its appearance this month. This useful note-book with pencil is given gratis to those who send two stamps to Messrs. Butcher & Son, Blackheath.

### TWO STYLES OF COLLEGE LANTERN.

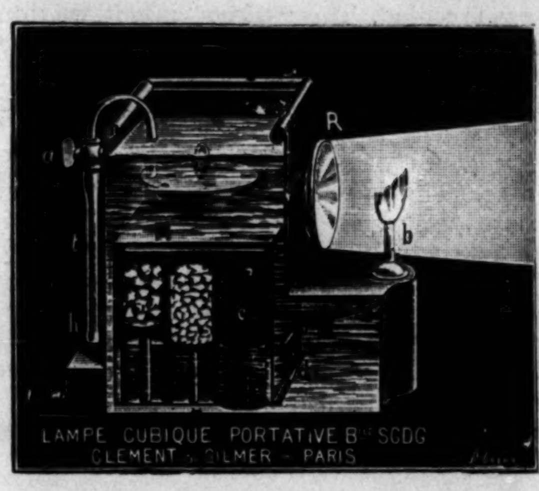
Messrs. Perken, Son, and Rayment have amongst their new apparatus a substantial style of lantern with open top stages, which they term College lanterns. It must not be supposed that this firm has only just commenced making lanterns with open top stages, for this they have made a speciality of for several years. Those, however, introduced now are of cheaper form, that as per the first illustration, which is of japanned iron, being sold at 36s.; whilst that shown in the second illustration, which is of slightly different formation, is made of Russian iron, and sells for 48s.





### THE "CUBIQUE" ACETYLENE LAMP.

Messrs. Clement & Gilmer, 8 and 10, Rue de Malte, Paris, have introduced a new self-acting acetylene lamp for lanternists termed the "Cubique," which fits into any ordinary make of lantern. It is simple in action, reliable, and with the exception of the addition of a little water, say every 25 minutes, it requires no further attention during its time of burning. We submitted the apparatus to repeated tests, and find that the full charge of calcium carbide which it will hold is 5 ounces. After the reservoir is filled with water (5 pints) and the tap turned on, we at once obtained a good light quite equal to a high-class oil lamp, and this light continued without interruption for about an hour and a half, after which a very slight jumpiness was noticeable in the flame: this jumpiness was not, however, apparent on the screen at first, but a few minutes later the size of the flame began to decrease, and it finally went out. We must say we were particularly pleased with the behaviour of the lamp and its reliability of working.



The lamp, of which we give a sectional drawing, is 8 inches high, 8½ inches long at base, and 4¼ inches wide, and is strongly and neatly made. At the top of the inside receptacle will be found a ring, by means of which this part can be lifted out. After this is lifted out two catches *d* are turned down, when the bell portion marked M can be removed. We then see six perforated upright tubes, which are stood on six uprights, so that the height of the floor of each tube is, as it were, "steps and stairs." When these perforated tubes are in position they are each three parts filled with carbide. It will be seen that no two hold the same quantity, owing to the different heights of the standards on which they are placed. The total quantity of carbide which these tubes will comfortably hold is 5 ounces. On the top of these upright tubes a lid fits, and the bell part M is placed over it, the catches *d d* fastened, and the whole thing set into the reservoir R. The tap *a* is turned off, the rubber pipe *t* attached at *h*, and three pints of water poured into the reservoir R. As soon as the tap *a* is turned on, the pressure of the water forces the air out of the generating chamber M, in which water consequently rises until it touches the lowest floor level of one of the perforated tubes spoken of, when acetylene gas is immediately generated and burns at *b* (a Bray's 0000 burner). This action of ebbing and flowing of the water is continued automatically until all the carbide has been decomposed. At the top of the generating chamber will be seen a funnel-shaped piece with holes on top. This contains a coiled pipe leading to the tap, by means of which the gas is cooled. This "piece" might, we think, be improved if a hole were also made at the foot of it, so as to enable the general supply of water to circulate in it instead of the small supply which it holds. We have spoken of adding about a half-pint of water every 25 minutes. This is necessary for maintaining the pressure of gas, as the higher up the carbide receptacle which the water has to reach, so is the outside pressure decreased, and the occasional addition of the water overcomes this.

After use the condensed moisture from the tubes can be emptied by opening the small screw marked *v*, and the whole apparatus well washed, its special construction lending itself to an easy and thorough cleaning.

### ALADDIN AUTOMATIC LAMP.

In June Journal last year we tried and reported on an automatic acetylene lamp, which had been introduced by Mr. Wm. Tylar, of High Street, Aston, Birmingham, and it was only after repeated experiments that we gave our candid opinion of same, and although the opinion we then stated was not wholly in its favour we expressed the hope that it might be possible to overcome the difficulties that presented themselves. For some time experiments have been made with this lamp, the result being that a new form has been brought out. On reference to page 87 of this Journal for June, 1898, drawings of the lamp will be seen; if the reader will refer to same it will be seen that the old form was provided with three taps, whereas in the new model the centre tap has been done away with, the internal arrangements slightly altered, and the carbide chamber increased in size. Whereas in the old model we considered 5 ounces of carbide an ample charge, the new model will hold just 8 ounces. With the taps turned off, the reservoir at top is filled with water, then both taps turned on, when water is allowed to reach the carbide only in sufficient quantities at stated times to permit of an even light. The result of our tests with this new model are favourable in every way, and we found the apparatus gave a steady and good light, without requiring the slightest attention, for one hour and a half to the minute, at which time after a flicker or two the light went out. The new model is, we may say, a success, and if each apparatus is as carefully adjusted as the one which we have tried, they should meet with many supporters. We might just add that if the water reservoir is not well filled in the first instance, some little difficulty may be experienced in getting the apparatus to start working, but once started it is entirely automatic.

### WILKIE'S NEW EFFECT AND OTHER SLIDES.

For many months past Mr. E. H. Wilkie and his staff of artists have been hard at work producing novel effect and other slides, the aim being to supply only the highest possible quality. Amongst these many sets may be mentioned beautiful flower studies, baskets and groups of fruit, and many genre studies. A slide of the silhouette style, termed Sloper's lecture, will be found very humorous. A special feature in many of the sets comes under the heading of effects, and as is well known Mr. Wilkie is a past master in the art of producing those. We enumerate a few:—Parachute shell, Last days of Pompeii, Destruction of Spanish fleet, The seasons, Entrance to Mont Cenis Tunnel—in this set the railway signal changes, and an illuminated train passes into the tunnel, the Mandarin's dinner party, etc. There is also a special mechanical slide illustrating the phenomenon known as the Black drop, seen during the transit of Venus. This slide is composed of intricate mechanism, and is entirely automatic and self-setting. This slide is perhaps the most ingenious one ever offered to the public, and as may be supposed sells at a high price, considering the price of slides in general. Six guineas is the price of it. The correct adjustment of triple lanterns is also a hobby of Mr. Wilkie's, and he has introduced one which he terms Wilkie's perfected triple apparatus for optical projection. It is fitted and adjusted in a perfect style, and is at once ready for showing the most elaborate effects conceivable.

### RILEY BROTHERS' NEW SLIDES, ETC.

From time to time many new sets of slides are introduced by the well-known firm of Riley Brothers, Ltd., 55 and 57, Godwin Street, Bradford, Yorks, and for the coming season this firm have some excellent sets, including great towns of Great Britain, 50 slides; A tour through Great Britain, from John O'Groats to Land's End, 60; Russia and the Russians, 50; Tunis and Tunisia, 50; two lecture sets on the

Philippine Islands, each of about 50 slides; our Indian Empire, 60; Wool, from sheep to the shipper, 54; Life in many lands, 50; Oliver Cromwell and the great civil war, 50; Lights and leaders in Methodism, 42; a set of 20 slides from drawings illustrative of The Merchant of Venice (Shakespearian series). Several popular songs are also illustrated, the Chokee Bill series of cinematographic film pictures, and several beautiful lace and other new curtain slides. In their apparatus list we do not see that any specially new forms of apparatus have been introduced by them during the past few months, but then they have such a diversity that it is a difficult matter to add to them in point of usefulness.

### ITALIAN SCENES.

An excellent collection of views of Italy in the form of lantern slides has been published by G. W. Wilson & Co., Limited, of Aberdeen. This collection of slides exceeds one thousand in number, and consists of 12 distinct sets taken in and about some eighty different districts. For the guidance of those intending to purchase slides from this series, Messrs. Wilson & Co. have prepared special catalogues with miniature illustrations of these slides, which will be lent to applicants on receipt of postage and on the condition that they be returned within 10 days.

### MOTORGRAPH, ETC.

Messrs. Watson & Sons have added a "take-up" of a very simple character to their excellent little projecting machine known as the motorgraph, which makes it much more complete and capable of being used for public shows.

The motorgraph is too well known to need describing to-day, but despite the enormous number of projectors on the market it is still considered one of the simplest, steadiest, and easiest worked machines.

Messrs. Watson have a very large stock of films, many of which have been taken specially for them for the coming season. All interested should write for their new list, which includes the most up-to-date subjects.

Lanternists can always find something new and beautiful in lantern slides at 313, High Holborn. In addition to the usual varied subjects, many fine studies of flowers, sea and sky, street characters, "bits of disappearing London" etc., can be seen. The colouring of their special slides is most artistic.

### A NEW LANTERN ILLUMINANT.

Just before going to press we met Mr. Birt Acres, of High Barnet, who informed us that in a few weeks we should have a special invitation to see and test his new lantern illuminant. We tried to ascertain some particulars, but the most that we could gather was the following:—"Now Taylor, my boy, when you see this new light of mine, you will say it is greatly in advance of anything hitherto brought out for the purpose. The incandescence is most dazzling, yet the heat is so little that with it I could project a celluloid picture on the screen for half-an-hour without its even cockling. The light is easily managed and controlled, and I am protecting it by patents in several countries. If you wish to say anything about it in the next issue of the OPTICAL MAGIC LANTERN JOURNAL, you are at perfect liberty to give such particulars as I have given you, but in a short time you will have a special invitation to my works to see it in action."

—:o:—

## PATENT INTELLIGENCE.

*The following List, relating to current Patent Applications, is compiled expressly for the "Optical Magic Lantern Journal" by W. P. Thompson & Co., Patent Agents, of 322, High Holborn, London, W.C., to whom all enquiries for further information should be addressed.*

| No. | RECENT PATENT APPLICATIONS. |
|---|---|
| 16590. | 15th August, 1899. Robert Alfred Fraser. Improvements in and relating to cinematographs, biographs, mutoscopes, and the like. |
| 16671. | 16th August, 1899. William Speirs Simpson. Improvements in or relating to machines for sighting pictures cinematographically. |
| 16773. | 18th August, 1899. Cecil Wray. Improvements in coin-freed apparatus for exhibiting series of photographs or other pictures. |
| 17363. | 28th August, 1899. John Archibald Purves and William Thompson Purves. An improved form of optical apparatus for use in lighthouses and the like. |
| 17405. | 28th August, 1899. Ladislans Emanuel Granichstaedten. Improvements in kinematographs. |
| 17514. | 29th August, 1899. Jan Szczepanik. Improvements in and connected with optical projection apparatus. |
| 17795. | 4th September, 1899. Walter Hall. Improvements in methods and mechanism for exhibiting a series of pictures giving the appearance of motion. |
| 17952. | 5th September, 1899. Filotes Alberini, Anchise Cappelletti, and Lionells Ganucci-Cancellieri. Improvements in cinematographic apparatus. |
| 17965. | 5th September, 1899. Aloah Curtis Roebuck and Frank McMillan. A combined kinetoscope and stereopticon. |
| 17995. | 6th September, 1899. John McCheane. Improvements in cinematographic apparatus. |

### SPECIFICATIONS ACCEPTED.

*Copies of the following specifications may be obtained by remitting 1/- for each specification to W. P. Thompson & Co., Patent Agents, 322, High Holborn, London, W.C.*

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| 16812 of 1898. | Mills (Lumière & Lumière). Means or apparatus for obtaining and projecting chromo-photographic images. |
| 20660 of 1898. | Errera. Production of slides for optical lanterns. |
| 13986 of 1899. | Volkmann. Prisms for optical purposes. |
| 17434 of 1898. | Tänzler. Apparatus for producing panoramic lantern illusions. |
| 19620 of 1898. | Parsons & Bastian. Means for the production of novel optical effects applicable to advertising devices, stage purposes and the like. |

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## Correspondence.

### LIME CYLINDER MAKING.

*To Mr. J. Hay Taylor, Editor.*

DEAR SIR,—Surely the correspondent who signs himself "A Retired Manufacturer" at the end of his communication in the last Journal, does not expect readers to swallow all his assertions without the proverbial grain of salt. He informs us that one maker of limes controls three lime quarries. Has he any idea what this means, or does he look upon a lime quarry as if it were a small hole dug in one's garden? The maker of lime cylinders has a comparatively small output for his goods, and consequently can at best be a poor customer for a quarry, yet he, according to "A Retired Manufacturer," controls three quarries. Why, the idea seems absurd. Most owners are only too glad to supply new customers, for they, like all business men, want to turn their goods into cash, and the lime cylinder manufacturer is yet to be found who out of his profits can afford to pay any quarry owner sufficient to make any controlling arrangement. After reading the letter alluded to one would be almost inclined to think that the correspondent was still a maker of lime cylinders, and had written what he terms "Facts" in the hopes of deterring anyone else from engaging in such manufacture.

Yours etc.,
J. PERRY.

*To Mr. J. Hay Taylor, Editor.*

DEAR SIR,—I notice on page 115 of last issue of your valuable Journal that a correspondent states that he has followed the instructions you gave in the August Journal as to the making of lime cylinders, and has made a supply for his own use. I also have made a quantity, and took no pains to make any selection as to the grade of lime, and have been very successful. The cylinders are perfectly true, and the hole is absolutely in the centre, and they answer my purpose. The only drawback is that mine crack sooner than I should like, and I intend trying another lime, but as an amateur I am well pleased with my first attempts.

Thanking you for the particulars supplied,
I am, yours faithfully.
THANKFUL.

## Notes and Queries.

*Constant Reader.*—With regard to the carbonising of your acetylene burners, this may be occasioned by too great a heat in the gas itself. Can you not pass it through a coiled pipe lying in cool water before it reaches the burner? There is a good non-carbonising burner known as Naphey's burner, which was illustrated in this Journal a few months ago. A burner which has a small hole at the side so as to admit a small quantity of air will prevent carbonising.

*A. W.* asks where he can obtain lantern slides to illustrate a cycling tour in Belgium and the Ardennes, including Ghent, Bruges, Antwerp, Brussels, etc. *Ans.*—If you write to Mr. W. D. Welford, 55, Chancery Lane, London, W.C., he may be able to assist you, as he has a large collection of negatives which he has taken when touring in these parts.

*Experimenter* asks if we, or any reader, can inform him where the offices of the Micrograph Company have been removed to. They were, he says, at 92, Fleet Street, but when he went there he found the building in course of being pulled down. He wants to procure the special benzine incandescent burner which they introduced in connection with their animated picture apparatus. *Reply.*—We are unable to afford the information; perhaps some reader may. If the firm is still in existence, they will probably see this notice.

*S. W. E. Barnes (Italy).*—We do not think the adoption of a smaller condenser will assist you. With the one you have, withdraw the light until only the space occupied by the film picture is illuminated. If you have a larger circle of light projected upon it, all that falls to the sides, top, and bottom is lost for projection purposes. Thanks for the suggestion of fastening for film box; we will try it.

*H. G.*—See the article on page 130 of this issue on "Warm tones, etc."

*W. O'Hare.*—Your letter came as we were getting ready for press, but it will have early attention.

*To our Contributors.*—A number of special articles, many of which are illustrated, have come to hand for the October number. It was however impossible to make room for all in this issue; besides, some came as we were getting ready for press. However, all will appear in due course. Amongst those in type we have the following:—Hydrogen-fed Incandescent Light, Large Illuminations, Photography for Lanternists, Through the Villages, Living Pictures of Long Ago, Projection Microscope, The Lanternists' Outfit: as it was and is, Cycling and Lanternising, Appliance for Cutting Plates, Open Air Work, How Cinematographs Work, Village Shows, Correct Presentation of Dioramic Effects.

*Cyclist.*—The average cycle acetylene lamp is about 8 candle-power, although many are obtainable to yield about 70 candle-power.

*R. A.*—We cannot recommend you to buy the outfit alluded to: the price may seem low, but we should consider it dear at any price.